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Science and Industry Division

"NET" PROFITS

1 Natural Resources Bureau

2 Misc

★ The Source

Political and
Economic

★ The Commission

Its Objective
Its Foes

★ The Rise

And Fall of
the Fraser River
Salmon Fisheries

★ The Fishermen

Their Views
Their Pledge



"NET" PROFITS

Compiled by
NATURAL RESOURCES BUREAU
VANCOUVER, CANADA

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Natural Resources Bureau

16721

Acknowledgments

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U. S. Department of Commerce, Bureau of Fisheries:

- (a) "Abundance and Seasonal Occurrences of the Salmon in the Puget Sound Region and the Development of the Fishery," by George A. Rounsefell and George B. Kelez.
- (b) "Pacific Salmon Fisheries," by John N. Cobb.

Fisheries Statistics of Canada, 1935-36.

"British Columbia, from the Earliest Times to the Present," by Judge F. W. Howay.

"Annual Bulletins," Department of Fisheries, State of Washington, prepared by B. M. Brennan, Director of Fisheries.

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Foreword

TO the distinguished members of the International Pacific Salmon Fisheries Commission and the members of the Advisory Committee who represent the different modes of fishing, the canning industry and sport fishermen whose interests are intimately related to the salmon fishery of the Fraser River; this pamphlet is dedicated.

The creation of the International Pacific Salmon Fisheries Commission represents a high degree of statesmanship, foresight and mutual confidence on the part of the Governments of the United States and Canada. May nothing of party politics or petty advantage be permitted to mar the spirit of their task, impair the disinterestedness of their advice, nor limit to their use all of the facilities customary in the industry during the period preceding their appointment through which they may strive to achieve the one end only in view—the rehabilitation of the Fraser River sockeye salmon.

The foresight of the two High Contracting Parties to the Treaty, the United States of America and the Dominion of Canada, in making provision for the appointment of an Advisory Committee representative of all phases of the industry obtaining in both countries, and the expeditious manner in which the Commission appointed the Advisory Committee at its second meeting in Ottawa on January 26, 1938, less than two months after the Commission's inaugural meeting, indicates the degree that co-operation can be expected in co-ordinating the entire forces of the industry behind the gigantic task to which the Commission has set its hand.

It is our sincere hope that within the lifetime of many of us we may see the sockeye runs of the Fraser River become again as they once were, a livelihood to fisherfolk, a source of employment to tens of thousands in the canning and kindred industries and a valuable source of wealth and food to our two neighbouring nations.

The Source

IN coming to an agreement with Canada to establish an International Pacific Salmon Fisheries Commission the interests of the United States, particularly those engaged in the salmon fishery in the State of Washington, were moved largely through the desire of preserving this extensive breeding ground of the salmon for the unrestricted use of fishery propagation during the years that are to come.

It is unique that Canada should solicit the participation of the United States in the formation of a commission, the six members of which, three for Canada and three for the United States, have equal representation and authority to sit in judgment on the present and future uses of this purely Canadian waterway.

Therefore, there can be no doubt that the Fraser River has assumed a position of importance in the political and eco-



BRINGING IN THE FIRST SALMON OF THE SEASON

conomic life of Canada, equal in status to the major factors around which pivot the future diplomatic relations between the Dominion and United States of America.

The Fraser River is inseparably linked with the history and development of Canada through the exploration of Simon Fraser, who received instructions from the Northwest Company in 1807 to explore the "Great River," from its headwaters to the Gulf of Georgia.

This great western Canadian waterway is as vital in the economic and political life of the Dominion as the St. Lawrence, McKenzie, Nippigon, Saskatchewan and others in relative degree.

Its future, as a source of salmon fishery propagation, with the resulting trade benefits to the Dominion and continuous livelihood of tens of thousands of citizens of British Columbia and the State of Washington, depends entirely upon the statesmanship and intimate concern of those who take part in moulding the destiny of Canada through their positions as law-makers, administrators and servants in the political and commercial life of the country.

Origin

Stuart Lake, which drains into the Fraser River, is the most northerly source of this vast waterway. The total area drained by the Fraser and its tributaries is more than 90,000 square miles. Within this area are located some of the richest farm lands dependent upon its waters for irrigation. Huge mining developments use its waters for the generation of electric power and hydraulic operations. At the mouth of the river is the port of New Westminster, to and from which, deep-sea vessels ply all year to ports of the world carrying Canada's exportable produce, raw materials and manufactured goods. Along the banks of the river-mouth are located some of the largest lumber mills in British Columbia. There are also paper mills and numerous other manufacturing plants.

It is fitting that this vast waterway should be guarded and preserved for uses that will result in the greatest good to the greatest number of the bi-nationals who depend upon its source of wealth for their existence.

THE INTERNATIONAL PACIFIC SALMON FISHERIES COMMISSION

A. L. HAGER, Vancouver, B. C.

Chairman

EDWARD W. ALLEN

Secretary

Chairman International Fisheries Commission, Seattle, Wash.

CHARLES E. JACKSON

Assistant Commissioner of Fisheries, Washington, D.C.

TOM REID, M.P.

New Westminster B. C.

DR. W. A. FOUND

Deputy Minister of Fisheries, Ottawa

B. N. BRENNAN

Commissioner of Fisheries for Washington State, Seattle, Wash.

DR. W. F. THOMPSON

Director of Investigation

Seattle, Wash.

Advisory Committee

UNITED STATES

Purse Seines

LEE MACKOVICH, Everett, Wash.

Gill Nets

CHESTER CARLSON, Laconner, Wash.

Trollers

SEVRIN LEITE, Seattle, Wash.

Sport Fishermen

KEN MCLEOD, Seattle, Wash.

Canners

C. J. COLLINS, Seattle, Wash.

DOMINION OF CANADA

Purse Seines

M. E. GUEST, Vancouver, B. C.

Gill Nets

F. ROLLEY, Whonnock, B. C.

Trollers

W. G. HAWLEY, Ucluelet, B. C.

Sport Fishermen

M. W. BLACK, New Westminster, B. C.

Canners

RICHARD NELSON, Vancouver, B. C.



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Assistant Commissioner of Fisheries
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Seattle, Wash.

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Vancouver, B. C.

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Deputy Minister of Fisheries, Ottawa

B. N. BRENNAN
Commissioner of Fisheries for Washington State
Seattle, Wash.

The Commission

UNTIL the International Pacific Salmon Fisheries Commission was created under a treaty promulgated between the United States and Canada on July 27, 1937, the chances of rehabilitating the sockeye salmon runs to the Fraser River were considered a forlorn hope.

Under the terms of the treaty, the efforts of the Commission will be solely directed, for a period of eight years, two four-year life cycles of sockeye salmon, to the discovery of facts concerning the runs of this species of salmon, which propagates in the lakes and tributaries of the Fraser River. Particular consideration will be given to the runs of "early" sockeye, most valuable of all the species of salmon that breed in this vast waterway.

Although the Commission will direct its efforts in a study of the sockeye salmon, it will be unavoidable in following this research to arrive at conclusions without taking into consideration the contemporary runs of salmon in the same watershed. Therefore the life history and migration of all five species of salmon frequenting the Fraser will inevitably come under the observation of the Commission and have a bearing on conclusions reached and recommendations made to government authority.

No cure can be effected without first discovering cause. The actual cause of the depletion of the runs of sockeye to the Fraser River is momentarily not a matter of dependable record. By the collection of data concerning the life history of salmon and the external factors bearing upon it, it is considered possible, through time, to point to the cause of depletion and recommend the means of recovery and perpetuation.

For this work the Commission has secured the services of Dr. W. F. Thompson, whose contribution to the Pacific halibut industry is a record of world-famous achievement. The personnel of the Commission includes men of outstanding merit in their respective fields of endeavour.

While the terms of the treaty specifically state that the Commission shall have no authority to regulate types of gear in use in the industry, it has the power to recommend changes in the industry to the governments of the two High Contracting Parties.

It is imperative therefore that the Commission secures the unanimous support and assistance of all those engaged in the Fraser River fishery if its objective is to be speedily reached. This may depend largely upon the extent to which the Advisory Committee may be permitted to make recommendations which have been mutually agreed upon by its diversified membership, in advance of any action being taken to make changes in modes of operation now maintaining in the industry.

This Advisory Committee, appointed by the Commission, is composed of an equal number of fishermen of the United States and Canada, representing all types of fishing gear and cannery operators and sport fishermen, which guarantees the removal of parochialism and self-interest. The efforts of the Committee will be directed with a vision of the single purpose of rehabilitating an international asset which may not be fully enjoyed by the present generation but secured for generations to come.

When divergent groups employing different modes of fishing, which are frequently at variance on matters of policy, can join in common accord with those who process and distribute their product to market, there seems little doubt that every effort will be strained to uphold the prestige of the Commission and support to its use every facility considered essential to the purpose at hand and without which it will be impossible to discover abuses in the industry or recommend effective remedies.

Based upon the experiences of past years, when groups employing different modes of fishing have vied for position to strengthen their particular interests in this fishery, the necessity of maintaining *status quo* in the industry becomes apparent.

A review of the difficulties which faced Canadian and United States citizens in bringing the Commission into being after numerous failures over a period of more than twenty years would serve to show the extent to which protracted delay in its creation has retarded the opportunity of speedy adjustment of factors which threaten the fishery with ultimate destruction. It is essential therefore that the Commission be guarded against the efforts of any external agencies endeavouring to influence changes in the usages common to the industry, thereby depriving it of effective means through which to pursue the task allotted to it by international covenant.

Modes of Fishing

SALMON are usually taken commercially in drift gill nets, seines, pound nets or traps, and by trolling.

Drift Gill Nets

The advent of the drift gill net on the Fraser River in 1876 marks the commencement of expansion in the canned salmon industry. By 1890 this type of gear had spread to the Gulf of Georgia, adjacent to the Fraser, and packs of canned salmon of considerable size were made each year.

✕ A drift gill net is usually operated by one man from a small boat—most boats are powered by gasoline engines—some by oars and sails. When fishing, a drift gill net hangs down from the surface of the water much as a wire fence stands up from the ground. It is held in position by cedar floats attached to the top and by a line of lead weights at the bottom. Some drift gill nets are almost a quarter of a mile long and extend down into the water about fourteen feet. They are made from linen twine and are so knit that when hanging in the water each net forms a curtain of diamond shaped meshes through which the fish cannot pass. Drift gill nets used in the Fraser River have a maximum length of 900 feet and a maximum depth of 30 feet

Hauling in the gill net. Some of these nets are almost a quarter of a mile long. For time of fishing see Page 38.

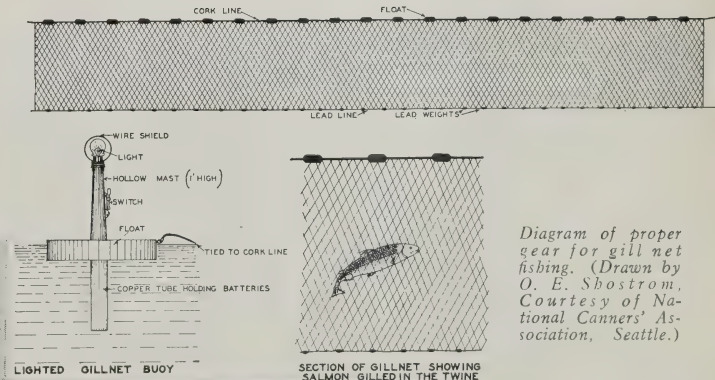


Diagram of proper gear for gill net fishing. (Drawn by O. E. Shostrom, Courtesy of National Cannermen's Association, Seattle.)

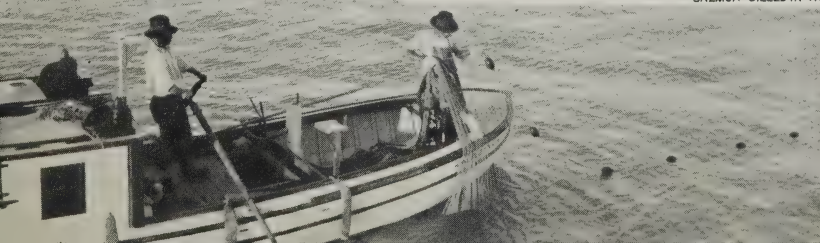


Photo Courtesy of "Pacific Fisherman"

with a minimum depth of 16 feet. In outside waters off the mouth of the Fraser River these nets are 1200 feet long. Swimming against the current the fish strike at the net before they see it, their heads sticking through the open spaces becoming so entangled in the twine that they cannot escape. At intervals the net is pulled into the boat and the catch is taken out.

Figures showing the value and number of drift gill nets, value of boats and number of men employed in the use of this type of gear, on the Canadian side within the waters under the jurisdiction of the Commission, are available but allowance must be made for possible minor inaccuracies.

Dominion government statistics in 1935 show there were 5,855 drift gill net licenses issued in British Columbia, of which 1,852 operated in the Fraser River area, employing 2,334 men, using boats and nets estimated at a value of \$1,400,000.

No record is available of the number of drift and gill nets in use on the United States side of the waters under the jurisdiction of the Commission. It is significant, however, to show that of the 610,146 sockeye caught in 1935 only 9,606 were taken by drift gill net fishing.

Brailing salmon from trap to scow, Southeastern Alaska.

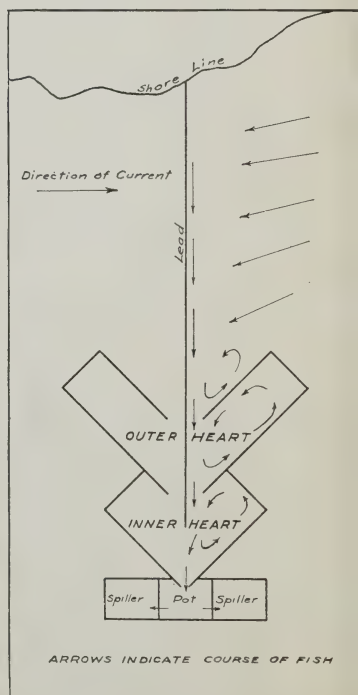


Diagram of trap.
For time of fishing see Page 38.

Pound Nets or Traps

The operation of pound nets or traps is illustrated in the accompanying diagram. The leads are constructed of wire netting stretched on piling from shore to trap. The fish swim against the tide and when they strike the lead a percentage follow it through the trap itself, where they enter and thus "trapped" pass through to the "pot." Thence they continue into the "spillers," from which they are removed by "brailing."

There are five pound nets or traps operated in British Columbia. They are located on the southwesterly portion of the southern point of Vancouver Island at the district of Sooke, near Victoria.

The following table shows the percentages of sockeye salmon coursing to the Fraser River that are taken by the traps at Sooke as compared with the portion taken in Puget Sound and on the Fraser River. The figures are taken from the 1936 report of Wilbert A. Clemens, Ph.D., director of the Pacific Biological Station located at Nanaimo, as printed in the annual report of the Provincial Fisheries Department.

Sockeye Salmon Packs

**Puget Sound, Fraser River and Salmon Traps at Sooke
1925 to 1934 inclusive**

Year	Puget Sound	Fraser River	Sooke Traps	Total
	U. S.	B. C.	B. C.	
	<i>Cases</i>	<i>Cases</i>	<i>Cases</i>	<i>Cases</i>
1925	112,023	35,385	3,862	151,270
1926	44,673	85,689	2,091	132,453
1927	97,594	61,393	4,337	163,324
1928	61,044	29,299	2,769	93,112
1929	111,898	61,569	3,480	176,947
1930	352,194	103,692	5,071	460,957
1931	87,211	40,947	2,439	130,597
1932	81,188	65,769	4,000	150,957
1933	126,604	52,465	8,721	187,790
1934	352,579	139,238	6,117	497,934
Total	1,427,008	675,446	42,887	2,145,341
Percentages ..	66.5%	31.5%	2%	100%

NOTE: While the above are the official figures for the Fraser River pack the actual percentage of the Fraser River sockeyes caught by Canadian gear is even less favourable than the figures indicated, inasmuch as the pack includes some fish packed on the Fraser River, but caught in other districts.

These figures for the full ten-year period are not available, but for the year 1934 they are given as follows:

Fraser River pack for 1934 as shown above.....	139,238
Less packed on the Fraser River, from fish brought in from:	
District No. 2	9,223
District No. 3	9,840
	<hr/> 19,063

Actual pack of Fraser River fish packed on the Fraser..... 120,175

Purse Seines

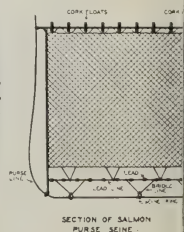
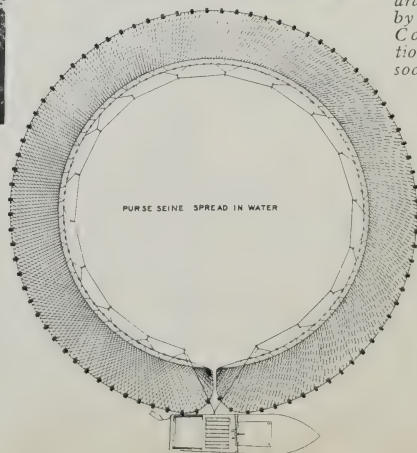
Purse seines are operated from power-boats. The seine is usually made from treated cotton webbing and is frequently eighteen hundred feet long and one hundred and fifty feet deep. It is weighted at the bottom with lead and supported at the top by corks. The seine is let out in a large circle surrounding a school of fish. Next the bottom is closed ("purse") by means of a rope running through rings attached to the bottom of the net. Gradually the net is hauled in until the fish are brought within a small part of the net close to the boat, into which they are "brailed" by a large scoop net.

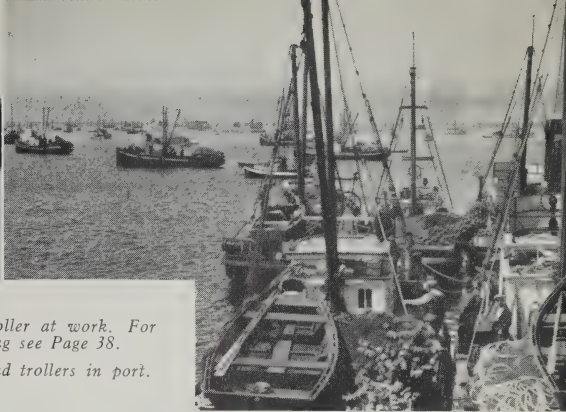


Purse seine as payed out in the water by the purse seine boat, now ready to be pursed up and drawn in. (Drawn by O. E. Shostrom, Courtesy of National Cannery Association, Seattle.)

PURSE SEINING

Net pursed up and crew getting ready to brail salmon into boat. For time of fishing see Page 38.





(Left) Salmon troller at work. For time of fishing see Page 38.

(Right) Seinners and trollers in port.

This type of gear was introduced about the year 1900 when a net similar to the beach seine was used. One end of the net was made fast to a scow on which was mounted a hand operated winch, used for tightening the purse line. The bulk of the net was carried in the stern of a large skiff, from which it was set in a circle around a school of salmon. When the set was completed the net was pursed from the scow, into which the fish were then brailed.

In 1903 the power-boat was used to both set the seine and purse it by power-driven winch. Within three years power-boats were in general use and their size and capacity increased, and their numbers grew. Purse seining in British Columbia has, until recent years, been confined to northern waters. It is the predominant mode of fishing in the United States waters under the jurisdiction of the Commission.

According to Dominion Fisheries' statistics there were a total of 320 purse seine licenses issued in 1935. The value of boats, nets and gear operating in the Canadian waters under the jurisdiction of the Commission is estimated at approximately \$1,800,000.

In the United States waters there were 215 seine boats, employing 1,687 men, in 1935. Purse seines fish 90 per cent of the sockeye salmon coursing to the Fraser River through United States waters.

Trolling

Only two species of salmon take the hook readily, the spring and coho. These fish are caught in large numbers by trolling, mostly for the fresh and frozen fish trade. Salmon trolling boats

are small, such as illustrated, fishing being done by lines trailing from long poles extending from the sides and stern. Spoon hooks are attached to the line. The boat travels slowly, the spoon spinning vigorously. When a fish strikes it is pulled in by a small powered winch.

Trollers fish on both sides of Vancouver Island. Those on the West Coast no doubt intercept part of the runs to the Gulf of Georgia. Since 1917 an increasing number of trollers have operated in the waters under the jurisdiction of the Commission. This type of fishing is limited to the spring and coho salmon, although a negligible number of pink salmon are also caught by trolling. Sockeye salmon are not caught by trolling.

YOUNG SALMON "FRY"



Baby Salmon, Twice Natural Size, showing yolk sac not completely absorbed.

SOCKEYE OR RED SALMON

(Oncorhynchus nerka)



Average weight 7 pounds, average length 28 inches

This is the salmon which, when canned, carried the name of Canada into many parts of the world. Its rich red colour, abundant oil and firm flesh ranks it the highest quality of Pacific salmon.

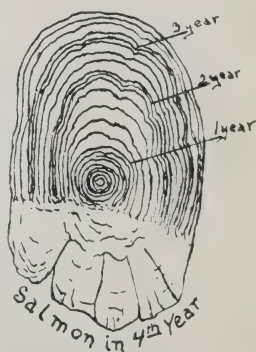
Salmon of the Fraser

ALL of the five species of salmon commonly fished in the Pacific water (see pages 16, 19, 20) are found coursing in the Fraser, but the "early" sockeye which spawn in the lakes farthest north are most valuable. They are equipped by nature with an abundance of oil and vigour denoted by firmness of flesh which fortifies them for the terrific battle they must make against the torrential waters, cataracts, whirlpools and falls before they reach the placid waters of the lakes, where they spawn and die.

Salmon making their way to the Fraser River for spawning, for the greater part, enter the Juan de Fuca Straits from the open sea, course past Swiftsure Banks in extra-territorial waters between the 48th and 49th parallels off Cape Flattery at the entrance to the Straits, past the south end of Vancouver Island, then through United States and Canadian waters to the shores of Puget Sound and turn north, entering Canadian waters again within the immediate vicinity of the mouth of the Fraser River. This description is general, as large runs also travel past San Juan Island off the south-east tip of Vancouver Island and along the island-dotted shores of the Gulf of Georgia (see map insert.)

Sockeye

The sockeye salmon, unlike the other four species of Pacific salmon, rarely spawn elsewhere than in a tributary of a lake, or in gravel provided with spring seepage within a lake. The eggs are deposited in a hole dug by the fish in a gravel bar and after being deposited are carefully covered. They hatch within a period of 100 days, depending on the temperature of the water. The young "fry" after absorption of the yolk sac, wriggle free from the gravel during the spring and summer months. The young hatched in the tributaries descend to the lake and remain there for a length of time varying from a few months to over two years, before descending the river to the sea. In the Fraser River the majority of the young appear to migrate to the sea in their second year. From scale readings (Clemens, 1934) it



As a tree trunk shows a ring for each year of its growth, the scale of a salmon shows a group of rings for each year of the salmon's growth.

appears that approximately 91 per cent of the returning adults left the lake in their second year, 5 per cent in their third year, and 4 per cent in their first year.

The sockeye salmon that escape the purse seines on Swiftsure Banks and in Puget Sound, the traps on Vancouver Island and the gill nets in the lower Fraser and off its mouth, continue upriver toward their spawning grounds. Everywhere, above the limits of commercial fishing, considerable quantities are taken by the Indians, both during the upstream migration and on the spawning grounds. In 1929, for instance, 47,668 are reported taken in this manner, 16,913 of which were taken in the headwater areas, Quesnel Lake, Stuart Lake and Francois Lake. This total does not include those taken and not cured at Quesnel, nor 6,214 taken and cured at Bridge River on their way to the headwaters. These figures indicate at least 25,000 of the headwater spawners, which are the best quality fish in the run, were removed from the river after a long and perilous migration. At a conservative estimate of 4,000 eggs per female (4,545 per female estimated at Cultus Lake, annual report Biological Board of Canada, 1931) these fish would have spawned 50,000 eggs.

Cohoe

Cohoe salmon show considerable variation in the distances from salt water at which they spawn. Catches of considerable numbers have been made by Indians on the Thompson and Shuswap Rivers several hundred miles from salt water, while many spawn in small streams within a mile or two of tidewater. The eggs are deposited in nests in the stream-bed and after fertilization are covered by the gravel displaced by the female digging the nest. Here the young fish are hatched and make their way up and into the stream in the spring or early summer, according to the mildness of the season. Unlike the sockeye, nearly all of which are lake residents during the early part of their life cycle, coho remain in the stream throughout their first summer and the following winter, then migrate to salt water.

Pink

Although a great deal of evidence has been amassed to show that both sockeye and spring salmon return to spawn in the same stream or tributary in which they were hatched, until

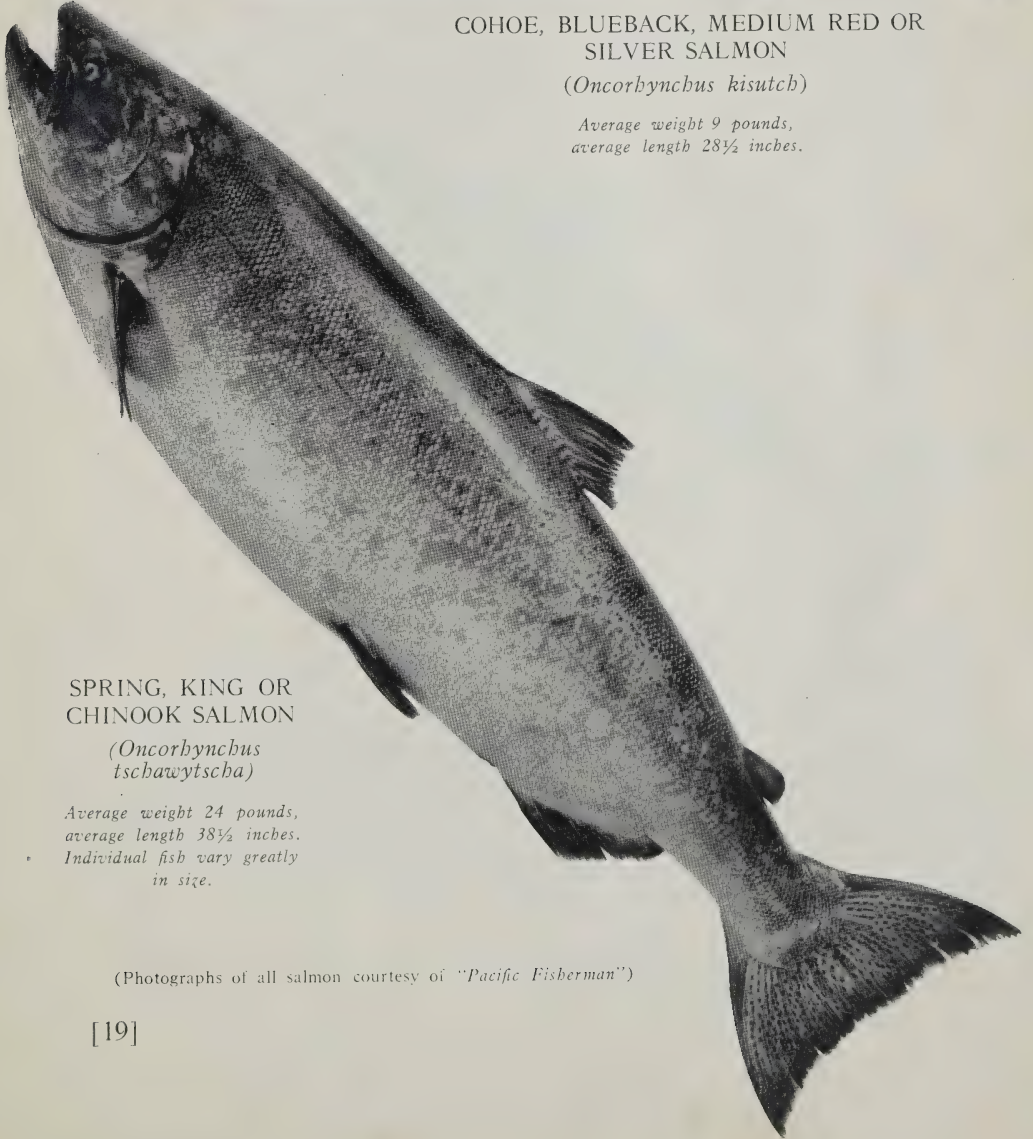
Salmon of the Fraser



COHOE, BLUEBACK, MEDIUM RED OR
SILVER SALMON

(*Oncorhynchus kisutch*)

Average weight 9 pounds,
average length 28½ inches.



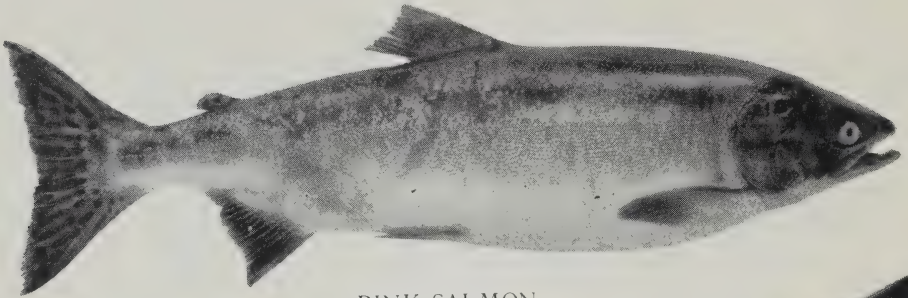
SPRING, KING OR
CHINOOK SALMON

(*Oncorhynchus*
tshawytscha)

Average weight 24 pounds,
average length 38½ inches.
Individual fish vary greatly
in size.

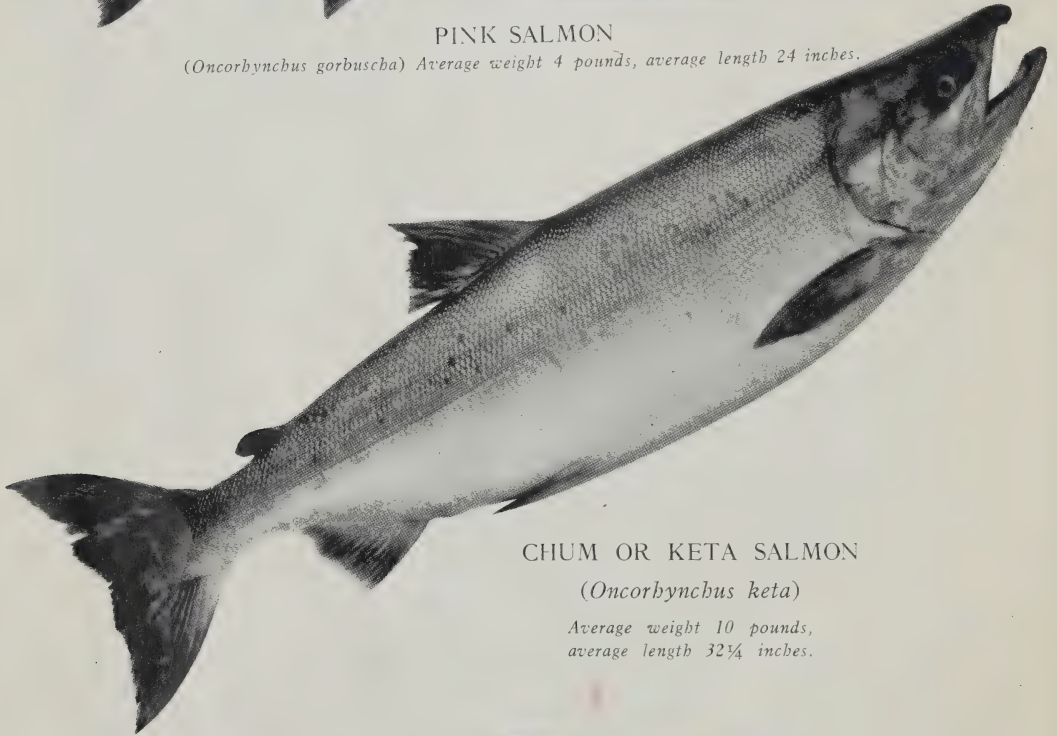
(Photographs of all salmon courtesy of "Pacific Fisherman")

Salmon of the Fraser



PINK SALMON

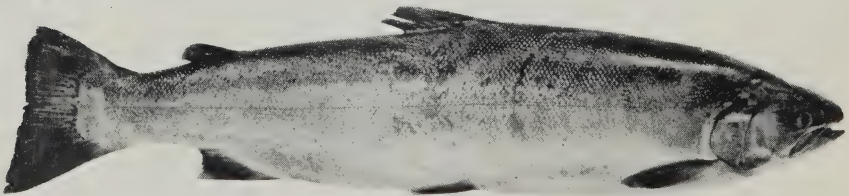
(*Oncorhynchus gorbuscha*) Average weight 4 pounds, average length 24 inches.



CHUM OR KETA SALMON

(*Oncorhynchus keta*)

Average weight 10 pounds,
average length 32¼ inches.



THE STEELHEAD

A trout, not a true salmon—canned to some extent but more desirable fresh and frozen.

—Photo courtesy of "Pacific Fisherman."

recently but little evidence has been gathered on the homing instinct in the pink salmon. Since the young pinks do not remain in fresh water it is possible for the adults to spawn in any available stream, regardless of food conditions. The young upon emerging from the gravel in the stream-bed migrate at once to the sea. They run every second year, live only two years and die.

During early navigation on the Fraser River, stern and side wheel propelled vessels frequently experienced difficulties during the season when salmon swarmed into the Fraser River in hordes, making their way to headwater spawning grounds. The condition was described in the "log" of one such vessel operating in the early 80's in the following manner: "A horde of silvery denizens of the sea, so dense as to impede the passage of the vessel; an inexhaustible supply of food sufficient to feed the Empire for generations to come."

Hell's Gate Disaster

Most of the tremendous "big" year run of sockeye ascending the Fraser in 1913 was prevented from reaching the spawning grounds on account of rock slides, incidental to the construction of a railway at Hell's Gate in the canyon near Yale. The spawning ground surveys of 1913 show 552,000 entering Quesnel Lake, contrasted to 4,000,000 in 1909, the previous year of the cycle. Chilco Lake had about one-eighth as many as in 1909, and the vast Stuart and Fraser Lake systems had only one-twentieth the run of previous "big" years. Anderson and Seton Lakes had an estimated escapement of 30,000 against

Salmon jumping falls on upstream journey to spawning grounds.. Photo courtesy of "Pacific Fisherman." }



1,000,000 in 1909. Lillooet and Harrison Lakes, below Hell's Gate, had poor runs.

Depletion of Fraser Sockeye

Today the most valuable run of salmon, previously known as the "Big fourth year run" of sockeye, is depleted to the point of being non-existent in ratio to its former greatness.

In the opinion of George A. Rounsfell and George B. Kelez, eminent authorities who made a special report to the United States Department of Fisheries on the abundance and seasonal occurrence of the salmon in Puget Sound region, the fixed closed season on the Fraser River for a number of years is not desirable in that it tends to build up the races of salmon that migrate at that time while intensifying the fishing of other races. The report reads, "Although the red sockeye salmon runs (to the Fraser) are at present in better condition than immediately following the Great War, they do not, as a whole, approach the abundance of the earlier years. Restoration of these runs could easily double the present value of the salmon fisheries of the region. It is therefore imperative that continued investigations be prosecuted—to lay the logical basis for the complete restoration of this tremendous potential wealth."



Typical of the headwater lakes of the Fraser River where sockeye salmon go to spawn.

Heritage Abused

THE sickle and flail of the homestead pioneer compared to the modern combine in harvesting the wheat of Canadian prairies might well be used as a simile to compare the first salmon cannery in Western Canada with the modern plants which are much better described by a glance at the photographs and diagrams on pages 26 and 27 than any word picture could describe.

Nor is it too wide of the mark to compare the position of the farmers in the dust bowl and other drought areas of the Canadian Prairie to that of the fisherfolk who are dependent upon the annual salmon crop of the Fraser River for their living. In each case nature provided the means of bountiful reward for labour. Overcropping and abuses occurred in both cases.

Nature's wealth of soil fertility on the prairie and salmon propagation in the Fraser River have been subjected to over-indulgence and neglect. The result is that both must be reclaimed, and preserved if they are to benefit present and future generations.

Hudson's Bay Company

The earliest recorded use of salmon for commercial purposes on the Pacific Coast of Canada is when the Hudson's Bay Company, claiming and exercising a monopoly over the fishery of the Fraser River in 1829 purchased 7,544 salmon from the Indians at Fort Langley at a cost of £13 17s 2d in goods, salted them in barrels and shipped them to the Hawaiian Islands and Asia.

From this early period in the development of the North American continent, thirty-eight years before Confederation.

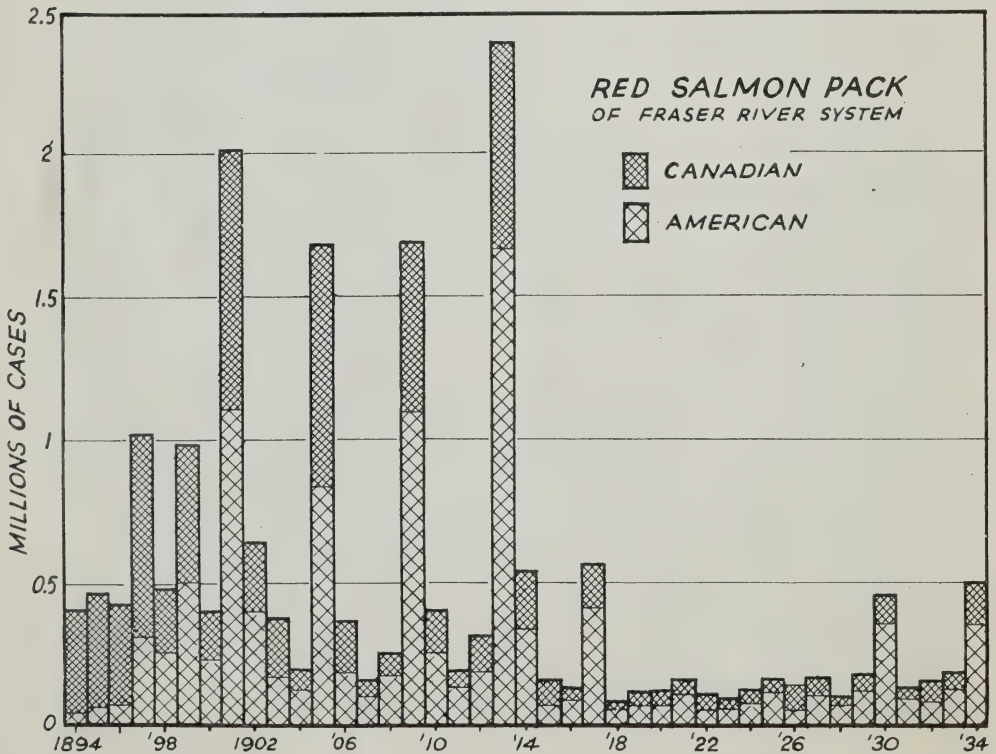


until the present time the Fraser River has never ceased to play an important part in the destiny of the Dominion.

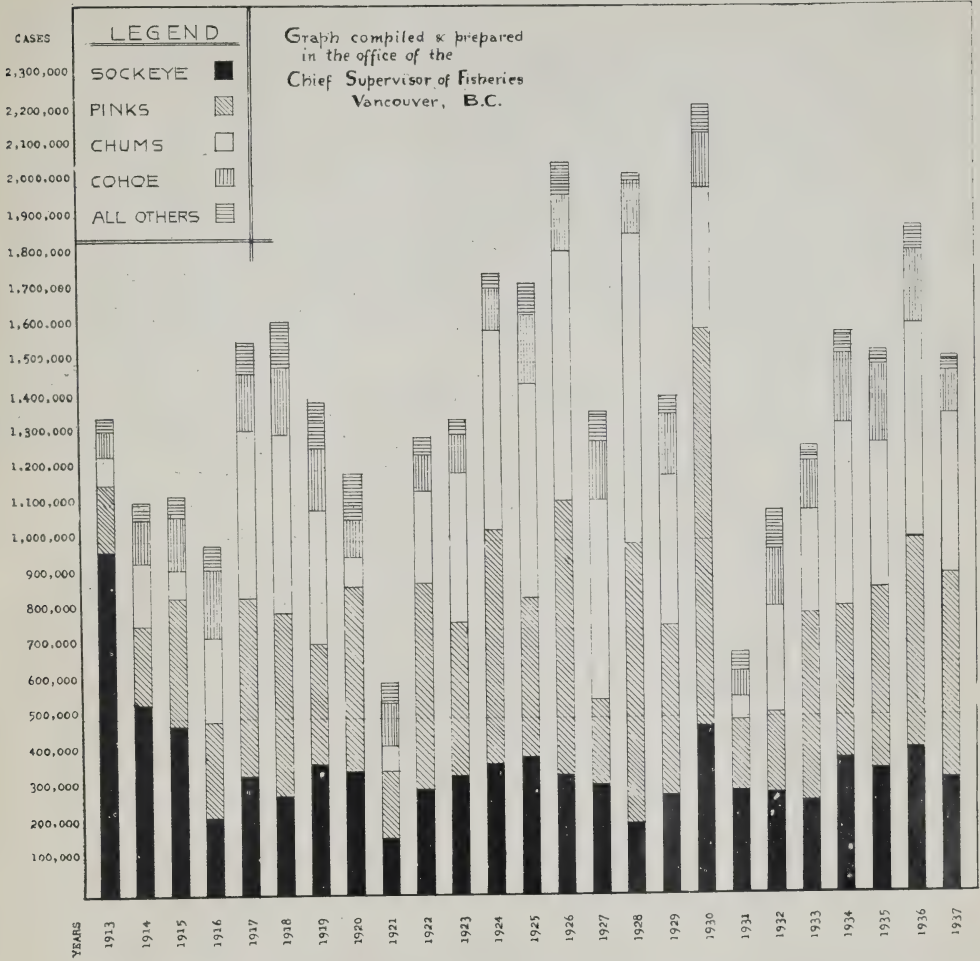
In the summer of 1867, the same year as Confederation, when the Fraser was teeming with millions of salmon, a pioneer named James Symes first preserved salmon in hermetically sealed tins. The cans were made and packed by hand and cooked by boiling on an ordinary kitchen stove. This experiment did not prove of practical commercial value. It was not until 1870 that Alexander Loggie and Company built the first salmon cannery on the Fraser River.

Rise and Fall

The meteoric rise and fall of the salmon fishery of the Fraser River is one that has witnessed three great forces struggle for predominance, with two pitted against the one least able to withstand unnatural opposition. Those who preserved salmon for human food, found markets for their product and sought to extend it without adequate vigilance over the source of supply.



Total Packs, All Species Canned Salmon in B. C. Figures on Page 28



Those who fished as a way of life clamoured to recover the greatest possible quantity of the teeming hordes of salmon that ascended the river annually from open sea. Against these two human agencies the salmon sought merely to reach the waters where by instinct they return for the purpose of spawning.

The Growth

Some evidence of the rapid growth and rapid decline of this fishery can be gleaned from the development of the canning industry on the Fraser River.

Three canneries were started in 1889, two in 1892, six in

1893, four in 1894, four in 1895, seven in 1896, and nine in 1897. During the period of 1899 and 1901 eight were started. At this peak of the salmon fishery on the Fraser River there were forty-eight canneries operating.

The Decline

British Columbia suffered from an over-supply of canned salmon in 1901 and during the following years the industry was faced with mergers and absorption of numerous plants under central corporate control. In 1928 the number of canneries had dropped to four.

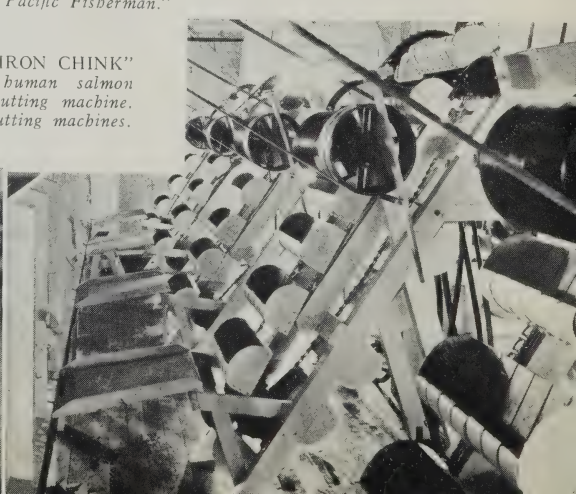
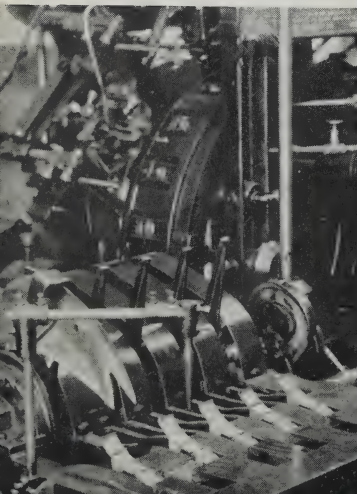
Hand in hand with the establishment of the Fraser River salmon fishery as a commercial undertaking crofter communities developed along the banks of the river. During the earliest years salmon were fished exclusively with beach seines and by gill nets from small boats propelled by sail and oars. When the salmon were "running" fishermen worked feverishly to catch the greatest possible number during the limited period of time the salmon were coursing up the river. In the winter months they repaired boats, made nets and generally occupied themselves with preparations for the next year's activity. They also contributed their share of work around the crofter home, growing much of the food required.

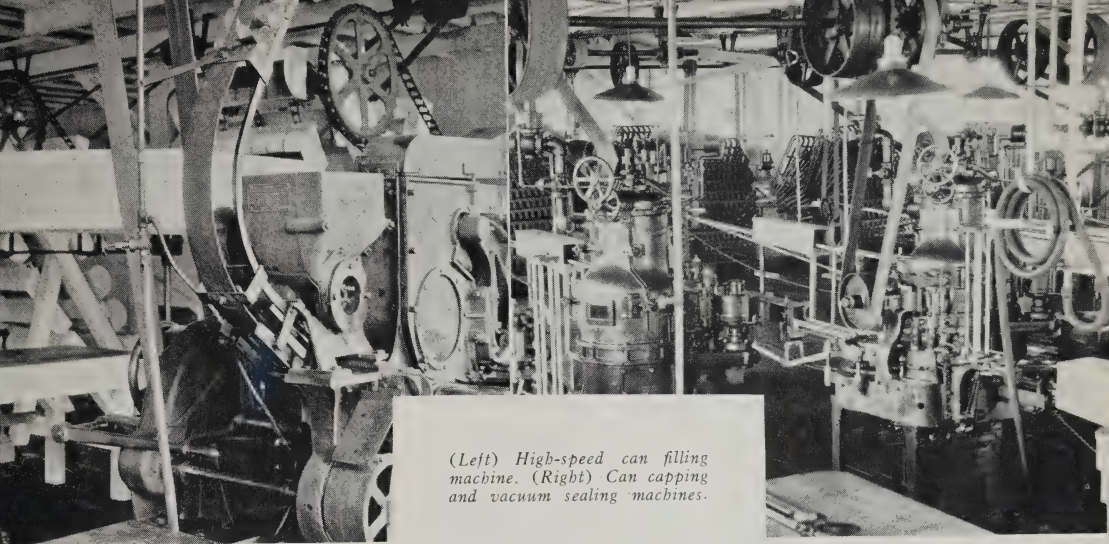
The decline of the salmon runs resulted in the closing down of many canneries. Relatively smaller catches demanded larger numbers of fishermen delivering to given canneries. Nets were imported from factories abroad and individual ownership of gasoline-powered boats rapidly replaced the dory propelled by oars and sail which formerly acted, in a sense, as a paternal link between the fisherman and cannery operation.

This hectic period in the industry had an adverse effect on

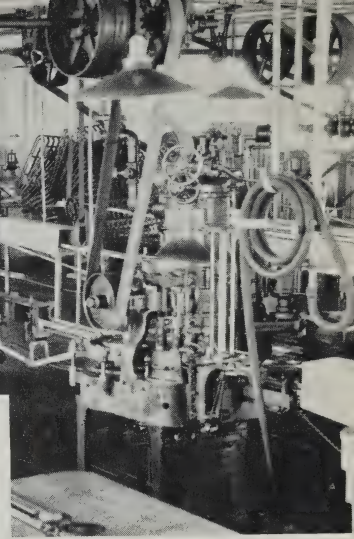
Photos courtesy of "Pacific Fisherman."

(Left) THE "IRON CHINK"
The all but human salmon
cleaning and cutting machine.
(Right) Fish cutting machines.





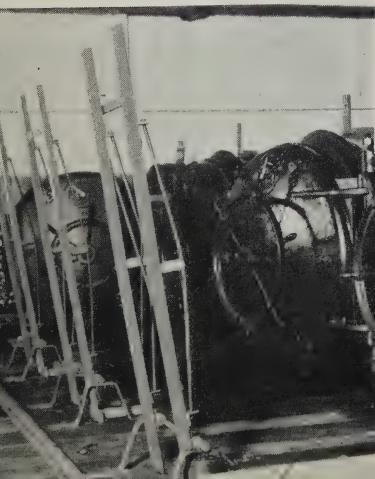
(Left) High-speed can filling machine. (Right) Can capping and vacuum sealing machines.



the livelihood of the thousands of men and women engaged in this fishery and upon the workers in industries through the lessened purchases of materials used in processing and marketing. Shrinkage in earnings of capital invested in plants, machinery, boats, gear and other equipment, caused strained economic conditions throughout the entire industry. Drastic readjustments followed.

Readjustment

Fisherfolk who formerly fished exclusively on the Fraser River found it necessary to use power driven boats to travel hundreds of miles up the coast of British Columbia to the Naas and Skeena Rivers and Smith's Inlet and Rivers Inlet to take advantage of the earlier seasons in northerly waters. They fished at the different districts, making their way south over a period of several months to arrive on the Fraser in time to participate in the fishing in "home" waters, from which they seldom strayed in years previous.



(Left) Retorts for cooking canned salmon. (Right) Labelling canned salmon.



Total British Columbia Packs of Canned Salmon, by Species, 1913 to 1937 Inclusive

Vertical scale (page 25) is divided into large divisions of 500,000 cases. Sockeye pack exactly as on graph; pink totals added to sockeye reach points indicated, other species increasing the length of each year's pole. Total pack of each year is therefore shown by each pole to the nearest ten thousand. The following scale shows the additions of species and denotes points plotted on graph. Figures are taken from official tables in printed annual reports except those for 1937, which are taken from the official pack bulletin of December 9, 1937:

Year	Sockeye plus	Pinks	Total plus	Chums	Total plus	Coho	Total plus	All Others equal	Total Packs
1913.....	972,178	192,887	1,165,065	77,965	1,243,030	69,822	1,312,852	41,049	1,353,901
1914.....	536,696	220,340	757,036	184,474	941,510	120,201	1,061,711	49,328	1,111,039
1915.....	476,042	367,352	843,394	82,000	925,394	146,956	1,072,350	61,031	1,133,381
1916.....	214,789	280,644	495,433	240,201	735,634	183,623	919,257	75,808	995,065
1917.....	339,848	496,759	836,607	475,273	1,311,880	157,589	1,469,469	88,016	1,557,485
1918.....	276,459	527,745	804,204	497,615	1,301,819	191,068	1,492,887	123,270	1,616,157
1919.....	369,445	346,639	716,084	372,035	1,088,119	175,670	1,263,789	129,367	1,393,156
1920.....	351,405	520,856	872,261	84,626	956,887	101,972	1,058,859	128,757	1,187,616
1921.....	163,914	192,906	356,820	71,408	428,228	117,288	545,516	58,032	603,548
1922.....	299,614	581,979	881,593	418,055	1,139,797	102,845	1,242,642	47,684	1,290,326
1923.....	334,647	440,932	775,579	570,497	1,193,634	112,044	1,305,678	35,990	1,341,677
1924.....	369,601	657,561	1,027,162	607,904	1,597,659	115,944	1,713,603	33,902	1,747,505
1925.....	392,642	445,400	838,043	657,947	1,445,947	188,505	1,634,452	86,170	1,720,622
1926.....	336,995	772,988	1,109,988	701,962	1,811,950	162,449	1,974,399	90,799	2,065,198
1927.....	308,032	247,617	555,649	562,109	1,117,758	161,148	1,278,906	81,543	1,360,449
1928.....	203,541	792,362	995,903	863,256	1,859,159	170,684	2,009,843	25,704	2,035,537
1929.....	281,306	477,969	759,275	424,982	1,184,257	174,198	1,358,455	42,295	1,400,750
1930.....	477,678	1,111,937	1,589,615	401,114	1,990,729	148,561	2,139,290	82,493	2,221,783
1931.....	291,464	206,995	498,459	55,997	554,456	76,879	631,335	53,768	685,104
1932.....	284,355	523,716	508,071	306,761	814,832	160,466	975,298	105,733	1,081,031
1933.....	258,107	532,558	790,665	293,630	1,084,295	137,289	1,221,584	43,488	1,265,072
1934.....	377,882	435,364	813,246	513,184	1,326,430	195,874	1,522,304	60,622	1,582,926
1935.....	350,444	514,966	865,410	409,604	1,275,014	216,173	1,491,187	37,835	1,529,022
1936.....	415,029	591,532	1,006,556	597,487	1,604,043	212,343	1,816,386	64,640	1,881,026
1937.....	323,127	577,550	900,677	450,934	1,351,611	114,869	1,466,480	36,042	1,502,522

Total Number of Cases Canned Sockeye Salmon Caught on Way to Fraser River, 1901-1935

Compiled from United States and Canadian official fishery statistics

Year	Fraser	Canadian Portion		Total
		Juan de Fuca Straits	Puget Sound	
1901	327,095	..... App.	800,000	1,127,095
1902	293,477	.....	372,301	665,778
1903	204,809	.....	167,211	372,020
1904	72,668	.....	109,264	181,932
1905	837,489	26,149	825,453	1,729,091
1906	183,077	4,220	178,748	365,975
1907	59,802	2,802	93,122	155,739
1908	62,126	11,448	170,951	245,525
1909	542,248	43,187	1,097,904	1,683,339
1910	133,045	17,387	248,014	398,446
1911	58,487	4,330	127,761	190,578
1912	108,784	15,095	184,680	308,559
1913	684,596	52,065	1,673,099	2,409,760
1914	185,483	12,700	335,230	533,413
1915	89,040	2,090	64,548	155,678
1916	27,394	4,752	84,637	116,783
1917	123,614	24,550	411,538	559,702
1918	16,849	2,848	50,723	70,410
1919	29,628	6,194	64,346	100,168
1920	44,598	3,801	62,654	111,053
1921	35,900	3,731	102,967	142,598
1922	48,744	3,088	48,566	100,398
1923	29,423	2,232	47,402	79,057
1924	36,200	3,543	69,369	109,112
1925	31,523	3,862	106,064	141,449
1926	83,589	2,091	44,569	130,249
1927	57,085	4,337	96,343	157,765
1928	26,530	2,769	61,044	90,343
1929	60,407	3,480	111,856	175,743
1930	93,416*	5,334	343,945	440,629
1931	38,507*	2,440	83,728	124,675
1932	61,769*	4,000	78,319	144,088
1933	43,745*	8,721	125,738	178,204
1934	133,159*	6,117	352,579	491,855
1935	57,212*	5,610	54,677	117,499

*This figure allows for 14,480 cases sockeye caught in other districts and packed in Fraser district in 1930, and 16,181 cases sockeye caught in other districts and packed on Fraser in 1931, and 21,678 cases sockeye caught in other districts and packed on Fraser in 1932; 9,736 cases sockeye caught in other districts and packed on Fraser in 1933; 18,063 cases sockeye caught in other districts and packed on Fraser in 1934, and 19,203 cases sockeye caught in other districts and packed on Fraser in 1935.

Wealth of the Sea

By ROLPH BREMER, B.A.



ROLPH BREMER
Editor
Pacific Coast News

SINCE the dawn of history fisheries have had a leading part in the political economy of state. A source of basic foods, the ocean, like the soil, has yielded abundantly and man has reaped, without sowing or cultivating and regardless of seasons. Winter or summer the sea has yielded its bountiful treasure, asking nothing in return. It has given man what he demanded and there seemed always to be more, a wealth of no end, a horn of plenty which continued to flow, strangely and mysteriously.

But the twentieth century's mechanization of industries threw the administration of the fisheries resources out of balance. Put on the basis of mass production, the fisheries failed, after a few hectic years, to respond to the increasing demands on their productivity, and the fisherman, alarmed at the rate of dwindling output, looked around for explanation and assistance.

Fisheries research workers lifted the veil of mystery; fish stocks, they said, were like a capital investment returning a certain interest. The fisherman had spent the interest and was drawing heavily on the principal; conservation and restoration of the capital was the only remedy.

This, briefly, is the situation as applied to the major fish producing countries of the world and it redounds greatly to the

credit of the two North American nations that they have faced this state of affairs by taking joint action to restock the fishing grounds of the western Pacific.

The fisheries of British Columbia are of a greater cultural and historical importance and have a larger economical significance than generally realized.

The history of the fisheries is interwoven with that of the province; their exploitation has opened new fields for human skill and enterprise. With its 4334 miles of coastline, British Columbia is being built by men and women who take their impressions from the sea and its ways and weave them into the multi-colored carpet of the province's cultural and social life.

An estimate of the fisheries' economical import should be based, not merely on the earnings of the relatively large number of persons occupied in the fishing operations and the direct production value, but on the multifarious effects on allied industries and trades.

The unique position of the fisherman is illuminating. Operating his own boat, he carries on business under independent management, coupled with the intricate and extensive machinery of processing and marketing, puts into requisition the services and products of a great many home trades.

The value of the production of the fisheries in British Columbia was \$17,230,000 in 1936; of this amount, \$12,000,000 is estimated to have been spent in British Columbia, while the balance, \$5,000,000, went to other countries for tin plate, nets and other products not manufactured at home.

Operation of plants, canneries, vessels and boats requires gasoline, oil and coal for power; lumber for wharfs, buildings, boxes and construction; paints, engines and machinery. The thousands of persons, employed by the industry, need and use the thousand and one necessities of life and of their trade, from bread, butter, tea and coffee, to compasses and radios. Coast-wise, deep-sea and rail freight is a major item, as is cartage, telephone and telegraph, ice, salt, insurance and labels.

The magnitude and potentialities of our fisheries are such that five—ten years from now, the figures may be doubled or trebled.

On the map of our fisheries resources we find many white spots, many *terra incognitas*, but new fields are being explored and investigated, in laboratories, in plants, on the grounds. Who heard of salmon caviar, halibut liver oil, shark oil a few years ago? Today, these by-products add materially to our fisheries wealth.

✧The industry is young and vigorous. Its growth is healthy and the appreciation of the fishery problems, as manifested by the international treaties for the conservation and rehabilitation of the halibut and sockeye salmon, strengthens faith in the industry and is a guarantee of a careful administration of the wealth of the sea.

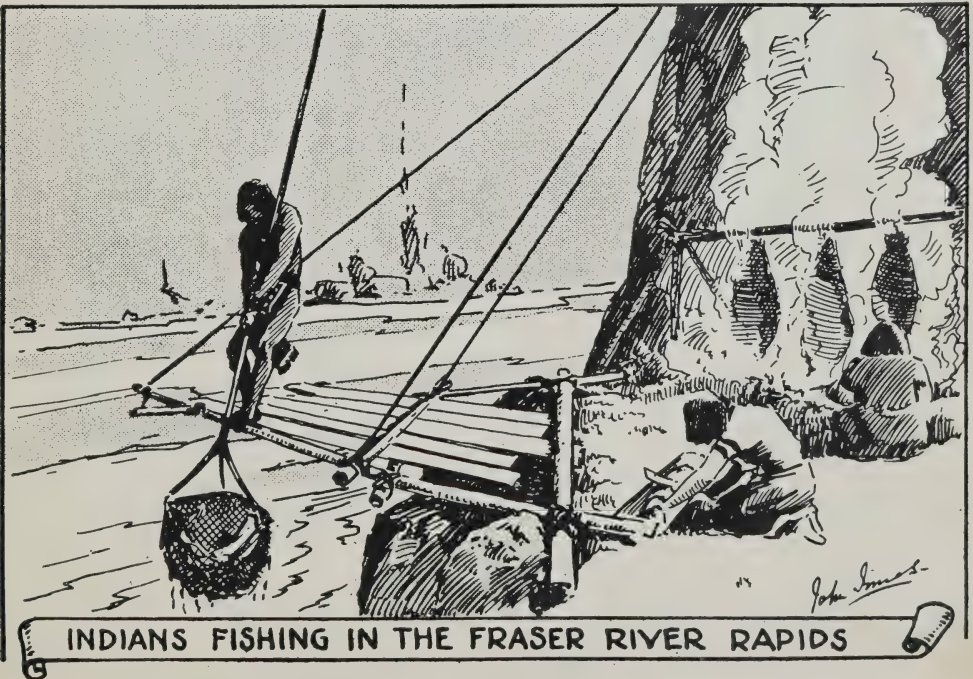
Natural Foes

THE work of the Pacific Salmon Fisheries Commission aimed first at the preservation of the Fraser River as an area for salmon propagation will meet with plausible opposition from several prejudiced sources.

Sport Fishing

The vast number of sport fishermen who desire to increase the propagation of trout in the lakes and streams tributary to the Fraser River naturally seek to promote the means of greater pleasure. Their claim is bolstered by support from advocates of greater tourist trade attractions; by those interested in the manufacture and sale of sporting goods and by those who maintain tourist resorts.

The cutthroat trout, most desirable for sport fishing, is a deadly enemy of the salmon industry. They destroy literally millions of young salmon "fry" as they make their way down stream to the sea. Other species of trout take a heavy toll of the salmon eggs deposited at the spawning grounds.



INDIANS FISHING IN THE FRASER RIVER RAPIDS

Indians

Native Indians who consider it their rightful preserve to take salmon from the streams near headwaters for food in the same manner their forefathers did, prevent thousands of salmon which have battled their way successfully to breeding grounds from fulfilling the process of propagation.

Natural Prey

Sea gulls that hover around coastal lakes and streams and when in migratory flight, take another toll by killing salmon in the process of spawning and by the destruction of eggs. Bears and eagles also capture hundreds of salmon that have reached the smaller streams in a sluggish condition after their strenuous battle through fast waters. Both the gull and bear are protected by game laws, which prevent their destruction as enemies of the salmon fishery.



Power Projects

Of greater force still is the desire of industry and public utilities to secure points of vantage on the Fraser River and its tributaries for the development of hydro-electric power, and other uses in mining and agriculture.

Along many tributaries of the Fraser, mining developments, other industries and agricultural projects are harnessing these waters for power and irrigation. The Fraser River is the only sizable fresh waterway on the Pacific slope of North America that has not as yet been harnessed for the development of power to the detriment of fishery uses.

Under the National Reconstruc-



tion policy of the Roosevelt administration, the Columbia River has been harnessed for hydro-electric power by the construction of Bonneville, Rock Island and Grand Coulee dams. These projects cost millions of dollars. The potential power is in excess of present requirements.

Vehement protests from the salmon fishing industry on the Columbia River and the West Coast fell on deaf ears. In July of 1935 Representative Culkin told the Washington Government that if the plan was proceeded with it would mean the ruination of an annual salmon pack of \$15,000,000 and destroy a \$300,000,000 investment in that industry. This warning is now becoming apparent.

U. S. Rivers Blocked

What has happened on the Columbia River is also the case in the Sacramento, Rogue and Umpquah Rivers, which were former sources of salmon propagation on the Pacific Coast of United States. The Fraser is now considered the "Mother Stream" of salmon propagation on the Pacific.

During the month of May, 1935, Major J. C. MacDonald, comptroller of water rights for British Columbia, stated that engineers and geologists were examining the possible dam sites on the Fraser between Lytton and Soda Creek, capable of developing 1,700,000 horse-power. Since then surveys have been completed and the data recorded.

The battle for the use of British Columbia rivers and streams for hydro power, versus the preservation of these waterways as breeding grounds for salmon, upon which an annual \$20,000,000 salmon trade is dependent, has raged in a quiet way for years. It is not long since a proposal to dam the Nimpkish brought about a commission of enquiry. The project is still in abeyance.

There are proposals mooted to harness Campbell River, Nimpkish, Nechako, Naas and Fraser Rivers. There was talk of damming Adams River. Some years ago, in 1898, a dam was built on the outlet to Quesnel Lake. For years this lake was one of the big sockeye spawning grounds of the Fraser River system. After the dam was built to serve the mining industry, few sockeye reached the lake. Several years ago, Major J. A. Motherwell, Chief Supervisor of Fisheries, ordered a hole dynamited

in this dam, and since then a remnant of sockeye have returned to their hereditary breeding ground.

Quesnel Lake Example

The Commissioner of Fisheries' report for 1905 (British Columbia), in describing the sockeye salmon ascending a fish ladder constructed at the outlet of Quesnel Lake in 1903, states "Since 1898 the majority of the sockeye which passed up to the Quesnel Dam died below it without spawning, being unable to pass the race." The report for 1909 also states "In 1901 the sockeye were prevented from entering Quesnel Lake (one of the most extensive and important, if not the most extensive and important, spawning sections of the watershed of the Fraser) because the great dam at its outlet, constructed in 1898, had not been provided with a suitable fishway. As a result of this obstruction in the Quesnel River, thousands and hundreds of thousands of sockeye which reached the dam died there without spawning, and the many hundreds of miles of the tributary streams of Quesnel Lake were not seeded with eggs that year."

If a major portion of the 1899 run were, indeed, bound for the Quesnel Lake system, then perhaps an adequate explanation has been found for the sudden fall in this cycle, which in extent was comparable to that of the "big" year cycle after the Hell's Gate disaster of 1913.

These opposing forces are known impediments which the Pacific Fisheries Commission will inevitably have to face and endeavour to overcome. The Commission is, however, impersonal. It is composed of a group of men representing international interests and dedicated to the proposition of preserving an industry, not to its own use, but for the security of thousands of citizens dependent upon it for their livelihood.

Therefore, the forces which may seek to obstruct and confuse the work of the Commission are the foes of every person engaged in the salmon fishery in British Columbia and the State of Washington. Not alone as it may affect the waters under the jurisdiction of the Commission, but for the entire salmon fishery of British Columbia, because in preserving the waters under its jurisdiction for the use of salmon propagation to the exclusion of other harmful interests, a precedent will be established that will reflect benefit in other waterways where similar problems are eminent.

Will the Industry Unite?

The question may well be asked: Of what force will the representations of the Commission be in presenting the case of the salmon fishery before governments of the United States and Canada, seeking protection from the natural foes of the industry, if the forces within the industry itself are divided?

We have endeavoured to present, through the pages of this pamphlet, our views on the major problems concerning the Fraser River salmon fishery.

It is our earnest hope that the information here contained may serve to create a better understanding of the problems surrounding this industry and encourage the fullest co-operation in the gigantic task of rehabilitating and preserving it as a recurring asset.

THE TABLE COMMITTEE,
B. C. Fishermen's Protective Association.

(Signed)



President



Vice-President



Secretary

Executive Members

A. ANDERSON

A. BACK

F. C. CARTER

BARNEY HANSON

S. HORN BROOK

E. A. IVERSON

PETE LARSON

JOHN NOURM

R. E. RITCHIE

JOHN SVENDSON

MEMORANDUM

Commercial Salmon Fishing Regulations affecting the area covered by the International Pacific Salmon Fisheries Commission

Gillnets or Driftnets

In the area above mentioned the length of a salmon gillnet must not exceed 200 fathoms, except that in the Fraser River the length shall not exceed 150 fathoms.

The vertical breadth shall not exceed 60 meshes.

Salmon gillnets with meshes not exceeding $6\frac{1}{2}$ " are permitted from the 1st of January to the 1st of July in the Fraser River district. Commencing with the 1st of July the minimum mesh regulation is not operative and nets with any mesh may be fished up to September 30th. From October 1st to November 30th the meshes of these nets are limited to a minimum of $6\frac{1}{2}$ ".

Under the regulations all salmon fishing in the Fraser River district ceases on the 30th of November, provided that the Chief Supervisor may permit fishing to resume in December when he finds that sufficient quantities of pinks, chums and cohoes have passed to the spawning grounds.

The weekly closed seasons for this variety of fishing are as follows:

Below New Westminster Bridge—From Saturday at 6 a.m. to Monday at 6 a.m. in each week, up to August 31st, after which for the remainder of the year the closed period is from 8 a.m. Saturday to 8 a.m. Monday.

Above New Westminster Bridge—The weekly closed times are from Saturday at 6 a.m. to Monday at 12 noon, up to August 31st, and for the remainder of the calendar year, from Saturday at 8 a.m. to Monday at 12 noon.

Commercial Salmon Trolling

This variety of fishing in the Fraser River district is not carried on to any appreciable extent, although there is no closed season for this method.

Salmon Purse-Seining

The salmon purse-seining which is permitted in the Fraser River area, that is between the International Boundary on the south to a line parallel to the International Boundary placed approximately three miles north of such boundary, commences in the odd-numbered year, that is the year of the pink salmon run, on the 25th of August, and continues until September 30th, except in the years of the big runs of late sockeye, when the closing date is October 31st.

In the years of the runs of late sockeye this method of fishing is permitted as from the 1st of September, but in the years when there is no pink run, or no late run of sockeye salmon no purse-seining is permitted.

The weekly closed period for salmon purse-seining in the area between District No. 1, that is the Fraser River area to Victoria, is from Friday at 6 p.m. to Sunday at 6 p.m., except that the closed season in Seining Area No. 17 coincides with that of the Fraser River, below New Westminster Bridge.

Salmon Traps

Salmon traps are permitted to fish any time after the 1st of January, but must not take sockeye until the 15th of May, nor after the 30th of September. The weekly closed season in the case of this gear is from Friday at 6 p.m. to Sunday at 6 p.m.

The traps are usually placed in position about the latter part of April and dismantled about the latter part of October.

J. A. MOTHERWELL,
Chief Supervisor of Fisheries.

Sockeye Salmon Fisheries Convention



*Convention between Canada and the United States for
the protection, preservation and extension of the Sock-
eye Salmon Fisheries in the Fraser River System, signed
at Washington on the 26th day of May, 1930.*

Treaty Reservations

Three "understandings" are attached to the treaty and form part of the basis on which the Commission will operate. The reservations are:

1. That the International Pacific Salmon Fisheries Commission shall have no power to authorize any type of fishing gear contrary to the laws of the State of Washington or the Dominion of Canada.

2. That the Commission shall not promulgate or enforce regulations until the scientific investigations provided for in the convention have been made, covering two cycles of sockeye salmon runs, or 8 years.

3. That the Committee shall set up an advisory committee of five persons from each country who shall be representative of the various branches of the industry (purse seine, gill net, troll, sport fishing, and one other), which advisory committee shall be invited to all non-executive meetings of the Commission and shall be given full opportunity to examine and be heard on all proposed orders, regulations or recommendations.

Sockeye Salmon Fisheries Convention

His Majesty the King of Great Britain, Ireland and the British dominions beyond the Seas, Emperor of India, in respect of the Dominion of Canada and the President of the United States of America, recognizing that the protection, preservation and extension of the sockeye salmon fisheries in the Fraser River system are of common concern to the Dominion of Canada and the United States of America; that the supply of this fish in recent years has been greatly depleted and that it is of importance in the mutual interest of both countries that this source of wealth should be restored and maintained, have resolved to conclude a Convention and to that end have named as their respective plenipotentiaries:—

His Majesty, for the Dominion of Canada:

The Honourable Vincent Massey, a member of His Majesty's Privy Council for Canada and His Envoy Extraordinary and Minister Plenipotentiary for Canada at Washington; and

The President of the United States of America:

Mr. Henry L. Stimson, Secretary of State of the United States of America;

Who, after having communicated to each other their full powers, found in good and due form, have agreed upon the following Articles:

ARTICLE I

The provisions of this Convention and the orders and regulations issued under the authority thereof shall apply, in the manner and to the extent hereinafter provided in this Convention, to the following waters:

1. The territorial waters and the high seas westward from the western coast of the Dominion of Canada and the United States of America and from a direct line drawn from Bonilla Point, Vancouver Island, to the lighthouse on Tatoosh Island, Washington—which line marks the entrance to Juan de Fuca Strait,—and embraced between 48 and 49 degrees north latitude, excepting therefrom, however, all the waters of Barklay Sound, eastward of a straight line drawn from Amphitrite Point to Cape Beale and all the waters of Nitinat Lake and the entrance thereto.

2. The waters included within the following boundaries:

Beginning at Bonilla Point, Vancouver Island, thence along the aforesaid direct line drawn from Bonilla Point to Tatoosh Lighthouse, Washington, described in paragraph numbered 1 of this Article, thence to the nearest point of Cape Flattery, thence following the southerly shore of Juan de Fuca Strait to Point Wilson, on Quimper Peninsula, thence in a straight line to Point Partridge on Whidbey Island, thence following the western shore of the said Whidbey Island, to the entrance to Deception Pass, thence across said entrance to the southern side of Reservation Bay,

on Fidalgo Island, thence following the western and northern shore line of the said Fidalgo Island to Swinomish Slough, crossing the said Swinomish Slough, in line with the track of the Great Northern Railway, thence northerly following the shore line of the mainland to Atkinson Point at the northerly entrance to Burrard Inlet, British Columbia, thence in a straight line to the southern end of Bowen Island, thence westerly following the southern shore of Bowen Island to Cape Roger Curtis, thence in a straight line to Gower Point, thence westerly following the shore line to Welcome Point on Seechelt Peninsula, thence in a straight line to Point Young on Lasqueti Island, thence in a straight line to Dorcas Point on Vancouver Island, thence following the eastern and southern shores of the said Vancouver Island to the starting point at Bonilla Point, as shown on the British Admiralty Chart Number 579, and on the United States Coast and Geodetic Survey Chart Number 6300, as corrected to March 14, 1930, copies of which are annexed to this Convention and made a part thereof.

3. The Fraser River and the streams and lakes tributary thereto.

The High Contracting Parties engage to have prepared as soon as practicable charts of the waters described in this Article, with the above described boundaries thereof and the international boundary indicated thereon. Such charts, when approved by the appropriate authorities of the Governments of the Dominion of Canada and the United States of America, shall be considered to have been substituted for the charts annexed to this Convention and shall be authentic for the purposes of the Convention.

The High Contracting Parties further agree to establish within the territory of the Dominion of Canada and the territory of the United States of America such buoys and marks for the purposes of this Convention as may be recommended by the Commission hereinafter authorized to be established, and to refer such recommendations as the Commission may make as relate to the establishment of buoys or marks at points on the international boundary to the International Boundary Commission, Canada and United States-Alaska, for action pursuant to the provisions of the Treaty between His Majesty in respect of Canada and the United States of America, respecting the boundary between the Dominion of Canada and the United States of America, signed February 24, 1925.

ARTICLE II

The High Contracting Parties agree to establish and maintain a Commission to be known as the International Pacific Salmon Fisheries Commission, hereinafter called the Commission, consisting of six members, three on the part of the Dominion of Canada, and three on the part of the United States of America.

The Commissioners on the part of the Dominion of Canada shall be appointed by His Majesty on the recommendation of the Governor General in Council. The Commissioners on the part of the United States of America shall be appointed by the President of the United States of America.

The Commissioners appointed by each of the High Contracting Parties

shall hold office during the pleasure of the High Contracting Party by which they were appointed.

The Commission shall continue in existence so long as this convention shall continue in force, and each High Contracting Party shall have power to fill and shall fill from time to time vacancies which may occur in its representation on the Commission in the same manner as the original appointments are made. Each High Contracting Party shall pay the salaries and expenses of its own Commissioners, and joint expenses incurred by the Commission shall be paid by the two High Contracting Parties in equal moieties.

ARTICLE III

The Commission shall make a thorough investigation into the natural history of the Fraser River sockeye salmon, into hatchery methods, spawning ground conditions and other related matters. It shall conduct the sockeye salmon fish cultural operations in the waters described in paragraphs numbered 2 and 3 of Article I of this Convention, and to that end it shall have power to improve spawning grounds, construct, and maintain hatcheries, rearing ponds and other such facilities as it may determine to be necessary for the propagation of sockeye salmon in any of the waters covered by this Convention, and to stock any such waters with sockeye salmon by such methods as it may determine to be most advisable. The Commission shall also have authority to recommend to the Governments of the High Contracting Parties removing or otherwise overcoming obstructions to the ascent of sockeye salmon, that may now exist or may from time to time occur, in any of the waters covered by this Convention, where investigations may show such removal of or other action to overcome obstructions to be desirable. The Commission shall make an annual report to the two Governments as to the investigations which it has made and other action which it has taken in execution of the provisions of this Article, or of other Articles of this Convention.

The cost of all work done pursuant to the provisions of this Article, or of other Articles of this Convention, including removing or otherwise overcoming obstructions that may be approved, shall be borne equally by the two Governments, and the said Governments agree to appropriate annually such money as each may deem desirable for such work in the light of the reports of the Commission.

ARTICLE IV

The Commission is hereby empowered to limit or prohibit taking sockeye salmon in respect of all or any of the waters described in Article I of this Convention, provided that when any order is adopted by the Commission limiting or prohibiting taking sockeye salmon in any of the territorial waters or on the High Seas described in paragraph numbered 1 of Article I, such order shall extend to all such territorial waters and High Seas, and, similarly, when in any of the Canadian waters embraced in paragraphs numbered 2 and 3 of Article I, such order shall extend to all such Canadian waters, and when in any of the waters of the United States of America em-

braced in paragraph numbered 2 of Article I, such order shall extend to all such waters of the United States of America, and provided further, that no order limiting or prohibiting taking sockeye salmon adopted by the Commission shall be construed to suspend or otherwise affect the requirements of the laws of the Dominion of Canada or of the State of Washington as to the procuring of a licence to fish in the waters on their respective sides of the boundary, or in their respective territorial waters embraced in paragraph numbered 1 of Article I of this Convention, and provided further that any order adopted by the Commission limiting or prohibiting taking sockeye salmon on the High Seas embraced in paragraph numbered 1 of Article I of this Convention shall apply only to nationals and inhabitants and vessels and boats of the Dominion of Canada and the United States of America.

Any order adopted by the Commission limiting or prohibiting taking sockeye salmon in the waters covered by this Convention, or any part thereof, shall remain in full force and effect unless and until the same be modified or set aside by the Commission. Taking sockeye salmon in said waters in violation of an order of the Commission shall be prohibited.

ARTICLE V

In order to secure a proper escapement of sockeye salmon during the spring or chinook salmon fishing season, the Commission may prescribe the size of the meshes in all fishing gear and appliances that may be operated during said season in the Canadian waters and/or the waters of the United States of America described in Article I of this Convention. At all seasons of the year the Commission may prescribe the size of the meshes in all salmon fishing gear and appliances that may be operated on the High Seas embraced in paragraph numbered 1 of Article I of this Convention, provided, however, that in so far as concerns the High Seas, requirements prescribed by the Commission under the authority of this paragraph shall apply only to nationals and inhabitants and vessels and boats of the Dominion of Canada and the United States of America.

Whenever, at any other time than the spring or chinook salmon fishing season, the taking of sockeye salmon in Canadian waters or in waters of the United States of America is not prohibited under an order adopted by the Commission, any fishing gear or appliance authorized by the laws of the Dominion of Canada may be used in Canadian waters by any person thereunto duly authorized, and any fishing gear or appliance authorized by the State of Washington may be used in waters of the United States of America by any person thereunto authorized by the State of Washington. Whenever the taking of sockeye salmon on the High Seas embraced in paragraph numbered 1 of Article I of this Convention is not prohibited, under an order adopted by the Commission, to the nationals or inhabitants or vessels or boats of the Dominion of Canada or the United States of America, only such salmon fishing gear and appliances as may have been approved by the Commission may be used on such High Seas by said nationals, inhabitants, vessels or boats.

ARTICLE VI

No action taken by the Commission under the authority of this Convention shall be effective unless it is affirmatively voted for by at least two of the Commissioners of each high Contracting Party.

ARTICLE VII

Inasmuch as the purpose of this Convention is to establish for the High Contracting Parties, by their joint effort and expense, a fishery that is now largely nonexistent, it is agreed by the High Contracting Parties that they should share equally in the fishery. The Commission shall, consequently, regulate the fishery with a view to allowing, as nearly as may be practicable, an equal portion of the fish that may be caught each year to be taken by the fishermen of each High Contracting Party.

ARTICLE VIII

Each High Contracting Party shall be responsible for the enforcement of the orders and regulations adopted by the Commission under the authority of this Convention, in the portion of its waters covered by the Convention.

Except as hereinafter provided in Article IX of this Convention, each High Contracting Party shall be responsible, in respect of its own nationals and inhabitants and vessels and boats, for the enforcement of the orders and regulations adopted by the Commission, under the authority of this Convention, on the High Seas embraced in paragraph numbered 1 of Article I of the Convention.

Each High Contracting Party shall acquire and place at the disposition of the Commission any land within its territory required for the construction and maintenance of hatcheries, rearing ponds and other such facilities as set forth in Article III.

ARTICLE IX

Every national or inhabitant, vessel or boat of the Dominion of Canada or of the United States of America, that engages in sockeye salmon fishing on the High Seas embraced in paragraph numbered 1 of Article I of this Convention, in violation of an order or regulation adopted by the Commission, under the authority of this Convention, may be seized and detained by the duly authorized officers of either High Contracting Party, and when so seized and detained shall be delivered by the said officers, as soon as practicable, to an authorized official of the country to which such person, vessel or boat belongs, at the nearest point to the place of seizure, or elsewhere, as may be agreed upon with the competent authorities. The authorities of the country to which a person, vessel or boat belongs alone shall have jurisdiction to conduct prosecutions for the violation of any order or regulation, adopted by the Commission in respect of fishing for sockeye salmon on the High Seas embraced in paragraph numbered 1 of Article I of this Convention, or of any law or regulation which either High Contracting

Party may have made to carry such order or regulation of the Commission into effect, and to impose penalties for such violations; and the witnesses and proofs necessary for such prosecutions, so far as such witnesses or proofs are under the control of the other High Contracting Party, shall be furnished with all reasonable promptitude to the authorities having jurisdiction to conduct the prosecutions.

ARTICLE X

The High Contracting Parties agree to enact and enforce such legislation as may be necessary to make effective the provisions of this Convention and the orders and regulations adopted by the Commission under the authority thereof, with appropriate penalties for violations.

ARTICLE XI

The present Convention shall be ratified by His Majesty in accordance with constitutional practice and by the President of the United States of America, by and with the advice and consent of the Senate thereof, and it shall become effective upon the date of the exchange of ratifications which shall take place at Washington as soon as possible and shall continue in force for a period of sixteen years, and thereafter until one year from the day on which either of the High Contracting Parties shall be given notice to the other of its desire to terminate it.

In witness whereof, the respective plenipotentiaries have signed the present Convention, and have affixed their seals thereto.

Done in duplicate at Washington, the twenty-sixth day of May, one thousand nine hundred and thirty.

VINCENT MASSEY,
HENRY L. STIMSON.

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